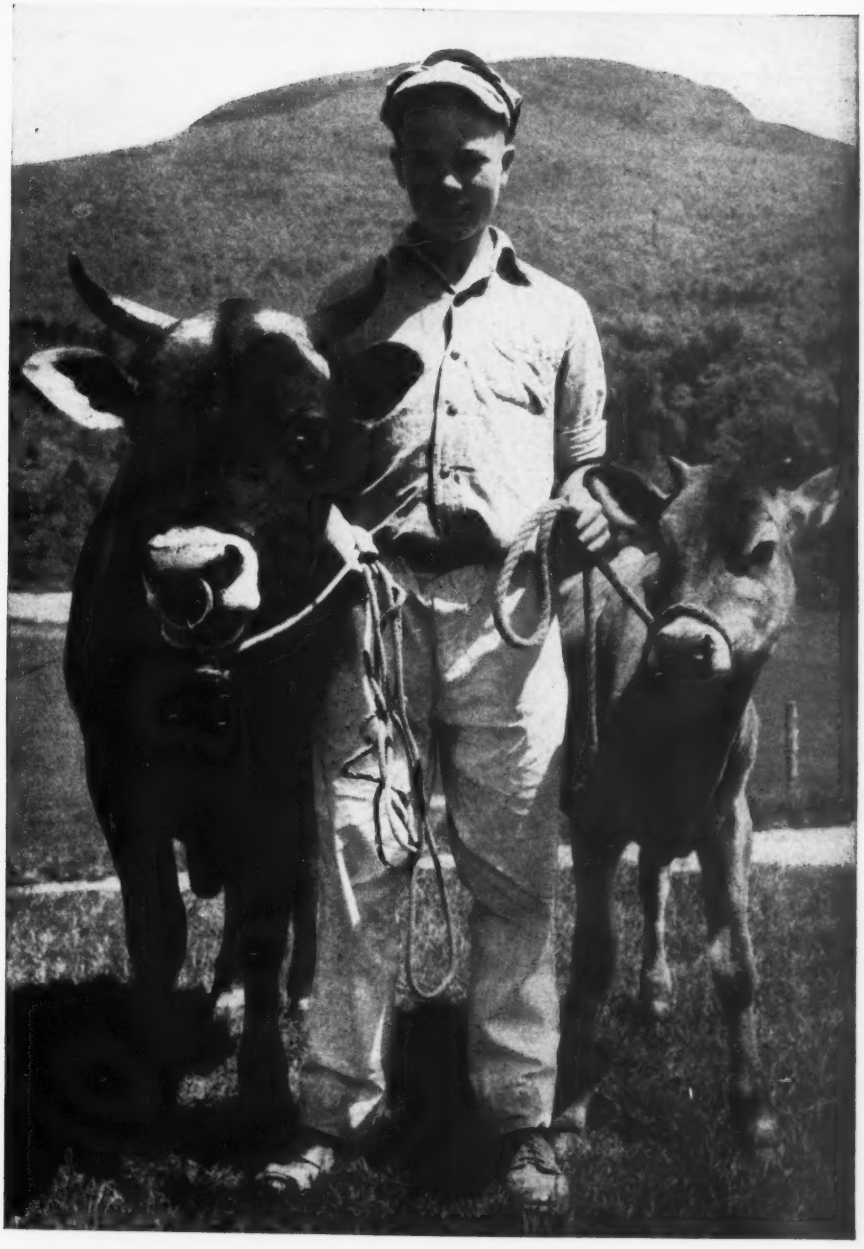
July 1947

CG Consumers' guide



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ILLUSTRATIONS: *Cover, USDA; p. 4, E&PQ; p. 5, USDA; p. 8, Extension Service; p. 9, USDA, lower left, PMA; pp. 10, 11, USDA; p. 12, BHNHE; p. 14, Extension Service; drawings, pp. 3, 6, 7, 13, 16, K. J. Burdette.*

Yearbook

"Science in Farming" is the title of a new book only last month off the presses of the Government Printing Office. It's a big book—960 pages that tell the story of the dramatic partnership of men and women of science with men and women of the soil, working together toward a better living for all. And there are 136 more pages of illustrations graphically revealing facts about this cooperation, which played such a large part in increasing our farm production by 70 percent in the past 25 years.

"Science in Farming" is the Yearbook of the Department of Agriculture. It is the first publication of the volume since 1942 when the war interrupted the production of the book that had come out annually, in one form or another, for almost 100 consecutive years.

This Yearbook, the editor declares, "was prepared primarily for farmers, but we have always had in mind other persons whose interest and work have to do with gardening, chemistry, beekeeping, stock raising, conservation, horticulture, and such." He also points out that the book should be particularly useful to returning servicemen who want to farm and to business related to farming.

However, its interest is not limited to these groups. To the consumer it gives the vital behind-the-scene account of research, scientific imagination, and experimentation that has contributed in recent years to the greater abundance and improved quality of the bulk of consumer goods. It tells not only of past performance of science but of work underway, and hints, too, of future achievements that will bring more, better, and less expensive items of food, clothing and shelter to the American consumer.

Its 135 articles prepared by 158 specialists in the Department of Agriculture and other scientific institutions throughout the United States give lucid accounts of work on consumer products ranging from DDT to prefabricated houses.

Pest control not only on farms and gardens but in homes is discussed. There is a chapter "Clothing That Works," which considers information on house dresses for women and work clothes for men with an eye to making them longer wearing, more efficient to work in, easier to care for, and pleasing to look at.

It tells of the research on penicillin in the Department of Agriculture's regional laboratories to increase the yields of the cultures that produce the life-saving drug.

There is an account of the experiments with rutin which began as an investigation of what could be done with stalks and other unusable parts of a tobacco plant, and ended in a finding of a new remedy for diseased conditions associated with hemorrhages and weak capillaries, in buckwheat, tobacco, and yellow pansies.

A chapter on "Hybrid Forest Trees" discloses work done with trees that may grow to harvesting size in one-half or one-third of the time it takes a nonhybrid tree to reach the same proportions.

The section on food and clothing includes nine articles on American diets, protein, the nutrients in milk, canning, drying, freezing foods, and mildew in fabrics.

The new knowledge about better livestock is set out in 23 articles dealing with the breeding of dairy and beef cattle, animal diseases, artificial breeding, feeding of cattle and calves, cross-breeding, hogs, sheep, goats, horses, and mules.

There are 6 articles on plant genetics; 24 other articles discuss new varieties of plants including strawberries, blueberries, peaches, citrus fruit, tomatoes, onions, potatoes, beans, sugarbeets, and a number of others.

In fact, here is a vast complex panarama of American agriculture brought into focus through the lens of science. Its effects upon the reader is one of wonder for the aggregate accomplishment that thousands of unsung men and women, working at small meticulous jobs in laboratory, field and forest, have achieved in the way of better way of life for all of us.

Because of limitation of funds and the necessity for reducing Department of Agriculture information activities, the CONSUMERS' GUIDE ceases publication with this issue. However, the CONSUMERS' GUIDE mailing list will be retained, and it is hoped that special information materials may be supplied, from time to time, of interest to those concerned with food and agriculture and related consumer problems.

The Editor

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Insects, Beware!

Powerful new weapons are converging on you. Insecticides, many stronger than DDT, are being moved to the front by the Bureau of Entomology and Plant Quarantine of the U. S. Department of Agriculture.

• Bad news for bugs is good news for farmers, gardeners, housewives, and just plain people who would like picnics without flies, mosquitoes, ticks, or chiggers. The news is *really* bad for insects. They may not feel the full force of it until current experiments are completed, but it definitely looks as if many harmful insects are "heading for the last round-up."

With the appearance of DDT, destruction reached a new high in the insect world. Even so, there are some important pests against which it is not effective. The boll weevil is one of these. Scourge and terror of cotton growers for decades, the boll weevil takes an annual toll from them of $120,000,000.

Equally impervious to the so-called "miracle drug" is the chigger. It would be difficult to appraise in monetary terms the summer days and nights this almost invisible pest has ruined, the billions of man-, woman-, and child-hours that have been lost to useful work or healthful play by trying to dislodge him from the abode of his choice. However, this may some day be only a horror tale told by elders to a generation who never clawed a chigger bite until it bled.

Benzene hexachloride has been found very effective against chiggers and boll weevils and numerous other pests which have brought incalculable loss to growers, and discomfort to humanity for centuries.

French chemists first discovered the insecticidal properties of benzene hexachloride in 1941. British scientists independently found and began applying information on the insecticide value of this material in 1942. Research in the United States has been going on for about 2 years now. Chief draw-back to this promising chemical compound is its persistent musty odor, which producers are attempting to reduce. Its greatest promise seems to be as a boon to cotton growers.

In preliminary tests benzene hexachloride killed more boll weevils more quickly than the old stand-by, calcium arsenate, and it also killed more cotton leafworms, plant bugs, cotton fleahoppers, and cotton aphids than the standard insecticides. It is the first insecticide ever found that gives promise of destroying the boll weevil, cotton aphid, and other sucking insects on cotton at the same time. No ill-effects to the cotton plants have been noticed when the new insecticide has been used in low dosages, but much experimental work remains to be done on its effect on plants and soils.

Benzene hexachloride as a cotton insecticide apparently has one weakness, as far as entomologists have discovered. It is not as effective as calcium arsenate or DDT for the control of bollworms.

Hexaethyl tetraphosphate, another of DDT's rivals for fame, was developed as an insecticide by the Germans during the war under the name of Bladan. It has received special attention from entomologists in the United States this past year primarily because it was said to be highly effective against aphids and there is a scarcity of nicotine—the insecticide normally used for controlling these pests.

Hexaethyl tetraphosphate is a synthetic contact insecticide, glycerin-like in consistency, orange-brown to clear in color. It remains stable at ordinary temperatures in the absence of water, but breaks down quickly in the presence of moisture and soon loses its power. This rapid decomposition has both its good and bad points. It lacks the long-lasting effects of DDT, but residues left on sprayed or dusted crops are less likely to be harmful to man and animals. This is important, because hexaethyl tetraphosphate is highly toxic. Used in concentrated form it may cause plant burning, but when properly diluted it apparently does not injure plants.

Investigations to date have shown that this newcomer in the insecticide field is particularly promising for control of a number of insect pests and mites: Whiteflies, mealybugs, red spiders, mites, aphids, and leafhoppers. Experiments with aerosols containing the compound have been made in greenhouses with promising results. The great majority of the plants evidently are not injured by the material when properly handled. Scientists at the Bureau of Entomology and Plant Quarantine have determined that a satisfactory formula is one gram of the concentrated material (or 10 grams of a 10-percent aerosol solution) to every 1,000 cubic feet of greenhouse space. Of 133 plants tested, only tomatoes and a few varieties of chrysanthemums were injured following aerosol application.

Because hexaethyl tetraphosphate is so highly toxic to man and animals, extreme care must be exercised in all handling processes. When using the aerosol in green-

houses, scientists recommend that the operator wear a gas mask. For treating plants in small greenhouses scientists hope to devise dispensers which can be operated from outside the greenhouse.

The Interdepartmental Committee on Pest Control has issued these warnings to persons using this insecticide:

1. Avoid contact with the skin. If skin is accidentally contaminated, wash carefully with soap and water immediately.
2. Avoid inhaling mist, dust, or aerosol.
3. Remove clothing promptly after using material and bathe with warm water and soap.
4. Keep material off of food.
5. Any one developing symptoms of headache or tightness of the chest when using this material should be removed immediately from exposure to it.

Chlordane is a chlorinated hydrocarbon also referred to as "1068", "Velsicol 1068" and "Octa-Klor." The numerals 10, 6, and 8 stand respectively for the number of parts of carbon, hydrogen, and chlorine in the formula. Chlordane has been selected as the common name for this compound. It is a contact insecticide and a stomach poison, too.

More effective than DDT against the German roach, it appears also to be more toxic to houseflies than DDT. An emulsion of chlordane atomized on corn ears showed promise against the corn earworm. The Bureau of Entomology and Plant Quarantine has recently reported that of several new materials tested against grasshoppers, chlordane showed the most promise.

In general, little is yet known about the toxic effect of chlordane on man and animals. Experiments so far indicate that it may be somewhat more toxic to animals than DDT.

Another of the new insecticides is a **chlorinated camphene** sometimes referred to as "Hercules 3956" and "Toxaphene." In action this material resembles DDT—slow knock down and kill, and persistent residue. Against body lice it is both more toxic and more persistent than DDT.

Laboratory tests show that it is effective against about the same group of vegetable insects as DDT, with these exceptions: More toxic than DDT to the tobacco hornworm and Mexican bean bettle; less toxic to the pea aphid, green peach aphid, and wireworms.

This ten-times-enlarged grasshopper head gives you an idea how its owner can be so destructive. New insecticides may soon curb his expensive forays on plants.

Field tests showed that chlorinated camphene was approximately as effective as a mixture of DDT and benzene hexachloride against the bollworm and other insects. It was effective against all of the cotton insects against which it was tested —cotton fleahopper, cotton aphid, boll weevil, bollworm, and cotton leafworm.

It shows considerable promise as a spray or dust for use against grasshoppers.

Hydroxypentamethylflavan. This superword deserves all its letters for it is the name of one of the most effective materials yet found for the control of chiggers. No one seems to have gotten around to giving it a pronounceable name, but chigger-killer would make it instantly popular with some groups. The verdict of the scientists is: "It gave excellent control of chiggers when applied to the soil at rates of 2 to 8 pounds per acre."

In 10 percent dust it also prevents corn earworms from penetrating ears of corn.

Sabadilla is a long-known insecticide made from the seeds of the wild Sabadilla plant. It has taken on new life in recent years as a result of the need for better insecticides. Main source of supply is Venezuela where seeds are gathered by hand.

In 1945 we used about 500,000 pounds of sabadilla dust mainly against harlequin cabbage bugs, squash bugs, chinch bugs, lygus and other plant bugs, and against lice on livestock.

Ryania is a little known insecticide prepared from the plant *Ryania speciosa*. It effectively protects corn against the European corn borer, but is not as effective in general as several other materials.

DDT can still be referred to as a "new insecticide" although we have heard about it constantly, it seems, for the last 5 years. First as a rumor about a "top secret" weapon used by our men in the tropics, later in the wonderful true stories about mosquito and fly and louse control. Research is constantly going on to discover new uses in the peacetime world and to determine the effect of DDT on plants, animals, and soils.

Last year DDT was used extensively by growers to combat a variety of pests. We now know that when used in formulations and dosages recommended for a specific purpose it will kill the insects without harming most plants.

Last year a 90-percent reduction was made in the per acre cost to the public in controlling the gypsy moth. This insect has seriously injured great tracts of the Nation's forests in the Northeast. DDT and the airplane provided this great economy. Only 4 years ago gypsy moth control cost from $15 to $20 an acre. Now it costs slightly less than $1.50 per acre. One airplane can treat 1,000 acres a day. The best that the ground equipment could do was 200 acres of forest per machine during the entire season.

There's no denying that DDT is a scourge to many insect pests and a boon to humanity, but there are gaps in its killing power.

DDT has been recommended for use in the control of certain insect pests. Work with the other materials mentioned in this article is still in the experimental stage and definite recommendations for their use, except in a very few instances, have not as yet been made by the Bureau of Entomology and Plant Quarantine.

Each new material to be used as an insecticide must first be carefully evaluated with regard to many factors, including: the possible harmful effects that may result from residues likely to accumulate in soils of different types, and hazards to man and animals of residues remaining on crops to be used as food or forage.

Besides the boll weevil and the chigger, mentioned in our first paragraphs, aphids, mites, Mexican bean beetle, and other important pests are not controlled by it. While it controls the codling moth on apple trees, injurious populations of mites often follow its use, due to its failure to control these pests and its destructive action against their natural enemies.

These facts make the results of research on new insecticides of utmost interest. Several of them, as we have shown you, are effective against the DDT-immune species. Others are as powerful, or more so against some common insects.

When you check insect pests against known insecticides it really looks as if science is beginning to get the upper hand over these age-old scourges of humanity.

Familiar Insecticides Scarce

News of the development of hitherto unfamiliar insecticides is particularly welcome to growers and gardeners this year when many of the standard, old-reliables are scarce, and the insecticide situation in general for the 1947 season is tighter than it ever was during the war years. The group of insecticides which the trade calls "arsenicals" is in particularly short supply.

Lead arsenate and calcium arsenate are both scarce.

Rotenone and pyrethrum supplies appear adequate.

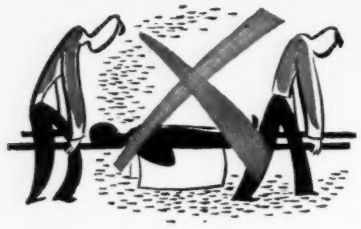
Benzene hexachloride, chlordane, and chlorinated camphene are in sufficiently good production to help substantially in our war on the insects. DDT formulations are in tight supply. Sabadilla is reported to be in adequate supply at this time.

Thousands of organic compounds are given preliminary tests under laboratory conditions in search of effective insecticides.

Insecticides designed for control of the corn borer are tested on growing corn after preliminary laboratory tests showed promise.

Testing an insecticide for control of fruit pests, particularly the codling moth. Material must kill insects, not injure plant.

A new insecticide is tested by the "apple plug" method in the laboratory of the Bureau of Entomology and Plant Quarantine.



Be your own safety squad

• Is your farm or home unsafe?

Accident statistics reveal that far too many farms and homes are just that.

Even a Paul-Bunyanish force of policemen could not possibly cover all the Nation's 6 million farms on their beat. Nor would a cop on every corner be enough to give all the homes of the country frequent and thorough-going safety inspections.

This means that farm families are perforce left largely to work out their own safety programs.

Much the same situation prevails as regards homes. Be it ever so humble, a man's home is his palace. But the 64-dollar question is, *How safe is it?* Truth is that over a million people were hurt in farm-and-town home accidents in 1945.

Life on the farm is likely to be more perilous than in any other major industry, judging from the accident statistics. Records for the past few years show that:

Disabling accidents may strike on one out of every four farms in America this year, unless extra precautions are taken. One out of every 10 farmers will be accidentally disabled some time during 1947, if the farm accident rate doesn't improve.

Cost of farm accidents comes high—not only to farm families who suffer the pain and financial loss that results from mishaps but also to buyers of farm products.

What to do to reduce the toll of farm and home accidents? Pass a law? Unfortunately the solution isn't that simple.

Farm safety boils down pretty much to a family affair. That's in the nature of things, since the typical farm is small and the typical farmer is his own boss. No guards are around to enforce safety rules.

Outside agencies can and do help with the farm safety program. For example, the U. S. Department of Agriculture is cooperating with the National Safety Council and leading farm organizations to underline the need to make the farm a safer place to live. These agencies are making practical information available to aid farm families in discovering and eliminating accident hazards on their farms. Such expert safety advice shows the way but it's up to the farm families themselves to put over their own safety program—on Farm Safety Week, beginning July 20, and all the 52 weeks of the year.

Family Safety Council

Why not hold a family safety meeting. Why not unanimously resolve to blot out farm accident hazards before they have a chance to blot out any of the family. Appoint everybody—from grandpa to junior—to be safety inspectors and accident prevention guards on duty all the time. Remember, unless the farm accident rate improves, farm accidents will kill 19,000 men, women, and children—and will injure 1,800,000 others.

Make Your Home Safe

Home is where most folks—whether farmers or town dwellers—spend most of their time. Also it's where a large number of disabling accidents happen—more than on the highway, for instance; and more than in the fields or barn. Why not make your home a safer place to live?

Swing into action to take these and other necessary safeguards: Have at least one strong handrail on the stairs; have steps in good repair; mop up spilled water and grease immediately; use a safe step-ladder instead of a chair for climbing; keep small rugs away from stairways; keep matches away from children; label poisonous medicines properly and keep them out of reach.

Farm Machinery—Blessing or Menace?

It's up to you, whether your farm machinery is a good servant or a treacherous ally. Machinery is safe for folks who observe safety rules. Otherwise it's dangerous. Here are some good rules for farm families to remember:

Children have no more business playing around a tractor than around a locomotive. Keep them away. Don't remove guards from power shaft, belts, and chains. Stop and block machinery before adjusting or unclogging it. Avoid wearing loose flapping clothing around moving machinery.

Clear the Farm of Booby Traps

It's everybody's job to be on the lookout to spot and clear away the booby traps from the farm buildings and farmyard. Think. Are water tanks, cisterns, wells, or pools protected so the children can't fall in? Is the farmyard clear of garden tools, forks, rubbish, and waste? Are ladders sturdy and in good repair?

Handle Animals with Care

Next to machinery and equipment, farm animals are the most frequent cause of farm accidents. So use horse sense when handling livestock. For instance, don't surprise animals by walking up to them suddenly from behind. And don't trust a "gentle" bull.

Don't Turn Handtools Into Dangerous Weapons

Handtools are handy—but if improperly used they become dangerous weapons. Make sure hammer and ax heads are secure and the handles in good condition. When whetting tools, stroke from behind to avoid cutting yourself. Have a place for every tool and keep it in its place. Keep dangerous tools away from play places.

Stop Those Fires

Fires annually cost farm families 90 million dollars, result in death and injury to many. Are you taking proper precautions to prevent them? Have you cleaned up fire hazards around your buildings—got rid of weeds, brush, and old lumber? Do you avoid building fires in dry, windy weather? Do you have an emergency water supply available?

Obey Common Sense Health Rules

Be sure your toilet facilities are sanitary, your drinking water safe. Avoid sunstroke by wearing proper clothes, drinking plenty of water and taking plenty of salt. Don't start or run gasoline motors in closed buildings. Keep a first-aid kit handy.

Don't Trifle with Electricity

An invaluable servant when properly used, electricity can be a ruthless killer. Don't endanger the lives of your family with makeshift electrical equipment. Cut off current when working on an electrical conductor. Don't replace burned-out fuses with coins, wire, or other metals. Be sure your electric fence is safeguarded with an approved controller, properly connected.

Call a family safety meeting. Fight farm and home hazards.

Home is safe as you make it —and you live there too.

Machines—blessing or menace? It's up to the user.

Clear the farm of booby-traps before they get you.

Hand tools can be dangerous. Use with care.

Handle animals cautiously. Don't trust "gentle" bulls.

Prevent fires. They cost farm families $90,000,000 a year.

Be smart. Live longer. Obey health and sanitation rules.

Don't trifle with electricity. Use good sense; play safe.

On the way to market

"To market, to market
To buy a fat pig
Home again, home again
Jiggity jig jig."

●Those were the good old days, as recorded by Mother Goose, when a farmer who had an extra pig for sale brought it, squealing ahead of him, to the village market, and the farmer who did not have a pig bought it, drove it home and butchered it.

It was a simple and direct path between producer and consumer, and certainly is a far cry from the broad devious road marked by the many complex operations which carries our food today from the farms to our tables.

Todays marketing procedures begin at the time the farmer plants the seed, for then he already has his market in mind.

Then a series of other operations begin—all part of the marketing process. There is transportation; by train, truck, and by plane. For many products there is processing, ranging from canning and freezing to washing and grading. There are commission brokers and wholesalers and retailers through which the food must pass before it reaches the consumer.

All of these many operations add charges to the cost of the commodity to the consumer. When, at many places along the way, costs can be reduced, costs in time, labor, or the product itself can be cut down; this means saving to the buyer and a greater share of the purchaser's dollar for the farmer. And there is room for plenty of improvement in marketing facilities and many other spots where costs can be cut.

These marketing costs take a large percentage of the consumer's dollar spent for farm food. Here is the breakdown of where the dollars spent for food at the retail store goes.

The farmer for producing the goods gets 38.4 cents of it. Transportation facilities collect 6.4 cents, those who assemble it get 3.6 cents, while 21 cents goes to processors. For the wholesaler there is 6.8 cents and for the retailer 23.8 cents.

And another interesting break-down of the same dollar is by cost items. Again 38.4 cents for farm production and 6.4 for transportation. Wholesale cut takes 24.8 cents, packages and containers require 4 cents, other expenses 21 cents, and profits 5.4 cents.

These figures for 1939 are the latest available for this type of analysis of what becomes of the consumers' food dollar. However, another way to look at costs of marketing is with an eye to their variations over the years. During the 1920–29 period 58 cents went out of each consumer dollar to pay the marketing bill. The 1930 to 1939 period, when times were harder, costs were up to 62 cents. But beginning with 1940 food marketing charges have dropped steadily as a proportion of each dollar spent by the consumer retail. Today they stand at 44 cents, the lowest on record.

This recent low percentage figure doesn't mean that marketing facilities have suddenly become extremely efficient. All it means is that in late years food has cost more at retail level while marketing costs remaining fairly constant, absorb a lesser proportion of the dollar.

It is with an eye on reducing marketing costs that the Research and Marketing Act of 1946 was passed. The act gives authority to the Department of Agriculture to cooperate with State marketing officials in exploring wastes and inefficiencies and find sound ways to eliminate them. The work will begin with the farmer and end with the retailer. There is much work to do.

An extensive survey of the wholesale marketing facilities of 20 cities made by the U. S. Department of Agriculture revealed that 15 of them needed extensive improvements in their handling of wholesale fruits and vegetables if the costs of marketing were to be reduced. Too many of our wholesale markets are antiquated and unable to efficiently handle the volume of produce.

There is a job to be done modifying many trade barriers set up by States which add to the cost of transportation and handling

There are many steps which food must pass from farm to market. Among them are the washing, grading, packing of perishables.

Waste and the higher prices caused from it often result from the improper loading of trucks which does damage to produce.

of foods which go into interstate commerce. There is a need too for more efficient and economical transportation to meet the enlarged demand of consumers for new types of processed foods.

Frozen foods require lower temperatures for transportation than do fresh perishables. The ordinary refrigerator cars now in use, cooled by ice and salt, can't maintain a temperature much below 18° F. above zero. But in order to keep frozen foods at their prime quality they must be stored and transported at nearly zero temperatures.

A newly developed refrigerator car shows possibilities of meeting the requirements of frozen foods. This experimental car is equipped with a refrigeration system that has no moving parts to get out of order, needs no power requirements and can maintain temperatures as low as 0° F. in the heat of summer. Low temperatures are obtained with a new application of an old refrigeration principle—split-absorption system using liquid anhydrous ammonia.

The consumer demand for improved packaging of perishable fruits and vegetables adds to the marketing costs but work is being done to bring these costs down. In point is the recent development in the merchandizing of perishables, trimmed, weighed, priced, and displayed in open-faced containers ready for self-service customers.

Experiments and studies in this type of packaging are being conducted in New Jersey and Pennsylvania by a chain store in cooperation with the Department of Agriculture. Vegetables and fruits selected, washed, graded, and put up in open-faced packages are displayed in stores and their sales compared with bulk commodities of the same sort. They are offered at the same price. The consumer preference for the packaged product is being tested to determine if the volume of business can be increased to the point where this new service could be given without increasing the cost of the packaged goods over that of the bulk, and at the same time net the chain store the same profit.

Other improvements in marketing that can increase the sale of the farmer's products and give the consumer the advantage of more convenient and economical food are: Developments in frozen meats to make them more easily available to the consumer the year around; the freezing of fresh orange juice and processing of concentrated citrus fruits; reduction of costs of air transport and many more.

Refrigeration of perishables on the way to market is being studied to bring it up to date for new products and to lower costs.

Supermarkets bring together great varieties of foods and make possible improved methods of storage, display, and merchandising.

Freezing Fundamentals

New discoveries are continually being made in the field of quick-freezing. For best home-freezing results, follow up-to-date scientific directions—and use top quality fresh fruits and vegetables.

● Oh Mr. Weatherman, what about saving a bit of the extra July heat and summer plenty of fresh fruits and vegetables that can easily be spared now for use later on, when the winter winds do blow?

So far little but talk has been done about the weather. But to enjoy fresh fruits and vegetables when the snow flies, ingenious American scientists and enterprising American housewives and businessmen are doing more than a little. They're doing a lot.

Much of this activity centers around quick freezing.

Not only has the commercial frozen food industry grown by leaps and bounds, but the volume of food being preserved in home freezers and neighborhood locker plants has increased enormously during recent years. The number of community locker plants rose from around 1,300 in 1938 to more than 8,000 in 1946. And while no official estimates for the number of home freezers are available, the eagerness with which many families are buying freezer units is no secret.

Growing popularity of freezing as a means of food preservation probably rests in the fact that good quality frozen fruits and vegetables have many of the characteristics of the fresh article.

The case for high quality frozen fruits and vegetables is stated very succinctly in a Bureau of Human Nutrition and Home Economic publication on *Home Freezing of Fruits and Vegetables*.

"With a home freezer or neighborhood locker plant, you can bring garden freshness to your family table all year long. Freezing gives you bright color, fresh flavor, and most of the vitamin values of fresh fruits and vegetables. . . ."

Then, by way of caution, the booklet adds:

"Food that comes out of the freezer won't be any better than the food you put in."

Quick freezing is a relatively new development in food preservation. For this reason, research and practical experience are continually bringing new facts and problems to the fore.

Of interest to the food industry is a new food-preservation process developed by the Western Regional Research Laboratory which combines most of the advantages of dehydration and freezing. The new process, which is called *dehydrofreezing*, puts the perishable food through the first cycle of dehydration. This reduces its bulk and weight without significantly altering its flavor or food value. The partially dehydrated food is then frozen.

Among the advantages offered by the dehydrofreezing process over ordinary freezing of foods is the saving that it effects in packaging and transportation costs because of the decreased weight and bulk. Also dehydrofrozen foods are easier to reconstitute than dehydrated foods.

That's in the commercial field. Much of the research being carried forward by the Department of Agriculture is focused on the problems which individual families will encounter in preparing and caring for household supplies of home-frozen foods.

New findings are continually cropping up. For this reason, families who freeze their own foods should not become set in their ways—but on the contrary should be continually on the alert to take advantage of the latest scientific findings in the field.

Here is a brief summary of important freezing pointers outlined by the Bureau of Human Nutrition and Home Economics:

Choose varieties that are adapted to freezing. You can write to the State college of agriculture or State experiment station for a list of the recommended varieties available in your community.

Yum, yum, frozen corn! Corn that's just ripe enough for table use is best for freezing. Cut corn is easier to freeze successfully and takes less storage space than corn on the cob.

Pick the fruits or vegetables when they are at their prime for eating fresh. Then freeze them pronto. If you must hold them a day, keep them as cool as possible.

Remember, size of the pieces is important and follow directions for preparing the vegetables carefully. Pieces should be uniform and not too large. Scald the vegetables for exactly the length of time specified in the directions.

Pack in moisture-vapor resistant containers especially made for freezing food. Seal containers tightly. Rush the packaged food to the freezer. If the frozen food must be carried to a community locker, have an insulated container ready for the purpose.

Store at 0° F. or lower.

The best methods for preparing and freezing vary for different fruits and vegetables. Hence it's important to follow directions closely for freezing a particular food—instead of arbitrarily following the identical procedure willy-nilly for all kinds, merely because the method worked successfully for one.

Some foods present particular problems. For example, no way has yet been discovered for successfully freezing whole tomatoes, lettuce, celery, cucumbers, and onions. The smart owner of a freezer then will not waste time, locker space, or valuable produce trying to freeze these particular vegetables.

Corn on the cob presents another touchy problem in freezing—a problem which the average housewife is advised to stay away from and to settle instead for frozen cut corn which is delicious and occupies much less freezer space.

Many will cling to that dream of corn on the cob for Christmas, advice of the frozen food experts to the contrary. For such, the New York State Agricultural Experiment Station offers some pointers:

To avoid doughiness which so often makes frozen corn on the cob unpalatable, corn must be harvested and frozen at exactly the right state of maturity. Corn that is too young tends to be watery, but even this is better than over-mature ears which will be doughy after they are thawed and cooked. To find out exactly the right stage for freezing requires experimenting each year. This combined with the large amount of locker space required for storing frozen corn on the cob puts the item definitely in the luxury class.

Two varieties suggested for freezing are Golden Bantam and Black Mexican. The Black Mexican is ready for freezing while its kernels are white and just before they start to take on a pink color.

Freeze only the best, is a good maxim for families with a yen for high quality frozen foods. This gal is shown sorting blueberries to remove all berries not up to par.

How to keep certain light-colored fruits from discoloring during storage is another problem facing families who embark on a home-freezing project.

Packing peaches in a sugar syrup to which ascorbic acid (vitamin C) has been added is the most effective method for preventing darkening and promoting nutritive value of the frozen fruit. In making the syrup, use 3 cups sugar to 4 of water, and add ¼ teaspoon of ascorbic acid to each cup or cup and a half of syrup. To be most effective, the sirup should completely cover the fruit.

Recent investigations by the BHNHE have also shown that peeling the peaches without scalding gives better results than peeling them after they are scalded in boiling water. Scalding makes the skin come off more easily but it also results in a translucent, cooked layer on the outer edge of the peach which sloughs and discolors during storage.

Another hazard that the successful user of a home freezer or freezer locker will avoid is "freezer burn." That's the name for excessive drying which occurs when frozen foods are improperly packaged for storing. Answer to this is to seal the foods tightly in special containers which are moisture-vapor resistant.

At the Western Regional Research Laboratory experiments with using a process of "dip-coating" instead of wrapping frozen food for storage have shown promising results. This new process consists of dipping the food in a "molten, thermoplastic material." Translated into plain English that means a liquid which becomes solid on contact with cold frozen food and leaves a continuous film over it. Tests showed that the film coating reduced oxidation, loss of moisture, and freezer burn. When the frozen food had thawed slightly, the film came off readily.

Dip coating may prove especially useful for packing frozen meat and poultry in the opinion of the Western Laboratory investigators. That's because the coating automatically adapts itself to the irregular shape of the poultry or meat cuts, so leaves little air confined in the package.

And speaking of meat and poultry, these old stand-bys still remain the most popular items for storing in freezer lockers. A survey of cooperative frozen food locker plants made by the Farm Credit Administration shows that during 1946 the average

family locker contained 353 pounds of food. Of this 163 pounds was beef; 135 pounds was pork; 15 pounds was poultry; 4 pounds was lamb; 12 pounds was game; 13 pounds was fruit, and 11 pounds was vegetables. That's the average for the country at large.

Right now is the big season for freezing fruits and vegetables. That's because you either harvest and freeze them when they are in their prime—or it's too late.

Quick freezing enables farm families to slaughter their livestock whenever it's convenient—in warm weather as well as after the first frost. However, much of the slaughtering is still done in the fall, after the weather gets cool.

Frying chickens are another matter. If you leave them too long, they aren't fryers any more. For that reason, many farm families make a practice of killing and freezing some of their young fryers in the summer in order to enjoy fried chicken in midwinter.

Cutting the chicken in pieces before freezing saves locker space. Also it enables the lucky owners of this A-one eating asset to store the legs and breasts away separately to dazzle dinner guests while making up separate containers of backs and wings for fricasse that's good enough plus for family meals.

When it comes time to dig into the locker for a party delicacy or a serviceable serving of a daily stand-by, how are you going to recognize what each mysterious package contains?

No doubt your memory is super, dear, but advice from seasoned users of home freezers and freezer lockers still is to label every single item clearly—and with a moisture-proof label, telling the kind of food and the date processed.

Keeping a record of the freezing date is important, since many frozen foods decrease in quality as they are held. If properly prepared and stored, they will maintain their quality for as long as 8 to 12 months. Hence it's smart to freeze only as much of the different foods as your family will use in the year.

Keeping an up-to-date inventory of the frozen food you have in storage is helpful in this connection. Every new item added or subtracted from the store should be duly marked on or off the list. Some housewives keep a map of their locker posted nearby, so they will always know where to reach for an item. Others separate the different kinds of food in mesh bags or by plywood or pasteboard partitions.

If you don't have an index and can't remember what's in your freezer, a good time to check is when you defrost it, which should be done at least once a year. Choose a time when stocks of home-frozen fruits and vegetables begin to run low.

Defrosting should be done quickly so the food will not thaw. Do *not* turn off the freezer during defrosting, as this will cause it to heat up too much. Scrape off the frost with a wide putty knife or a stiff-bladed spatula and brush onto a smooth piece of cardboard.

What to do in case the power goes off or the freezing machinery breaks down is another question which owners of home freezers must sometimes face. Rule one is to leave the cabinet closed. The food stays frozen longer that way—usually for 2 days even in summer, if the cabinet is fully loaded. When the cabinet is less than half filled, the food may not stay frozen for more than a day.

If repairs cannot be made within a day or two, get dry ice and place it in each compartment as soon as possible. Fifty pounds of dry ice should hold the temperature for 2 or 3 days in a cabinet that's less than half full and in a loaded cabinet 3 to 4 days. If no dry ice is available and the repairs take too long, move the food to a locker plant in insulated boxes as quickly as you can.

Even when it comes time to eat frozen fruits and vegetables, there are certain fine points to be observed.

Frozen berries, for example, taste better if they are served before they are completely thawed—while there are still a few ice crystals remaining. Peaches on the other hand have a better flavor when they are more thoroughly thawed, although their texture is better if they are still a little icy.

Although most frozen vegetables can be cooked without thawing, corn on the cob must be completely thawed. Also greens, broccoli, and asparagus cook more evenly if they are thawed enough to separate the leaves or stalks. As frozen vegetables are partly cooked before freezing, they take less time to cook than fresh vegetables.

If a package of frozen vegetables is too big for your family to eat at a meal, cut it in two and keep the uncooked part wrapped and frozen, so avoiding that warmed-over taste and vitamin loss. Never refreeze frozen vegetables.

You can get the following material on the preparation of frozen foods free by writing the Office of Information, U. S. Department of Agriculture, Washington, 25, D. C.

Home Freezing of Fruits and Vegetables, USDA, AIS–48.

Instructions on Processing for Community Frozen Food Locker Plants, USDA Miscellaneous Publication 588. (This is designed for supervisory personnel of home locker plants.)

So you want frozen freshness? Then work fast to get the food from garden into freezer.

This gadget helps in sealing moisture-vapor resistant liner preparatory to freezing.

"Shall Not Perish From the Earth"

From every State in the union youthful 4–H Club leaders met in their Nation's capitol to learn more about the duties of citizenship that must be performed to maintain a free land governed by its own people.

• Last month on the Virginia bank of the Potomac, overlooking the historic river, the Lincoln Memorial, Washington Monument, and the Capitol dome in the distance—two boys and two girls—from each of almost all the States came together to study and discuss the rights and duties of citizenship in a free country. They met at Arlington Farms, a housing development used for wartime employees.

They came to attend the seventeenth National 4–H Club Camp which is held annually under the supervision of the U. S. Department of Agriculture and the land-grant colleges. The Extension Service of each State chose 4 young people, between the ages of 16 and 21, with a background of at least 3 years 4–H Club work. They were selected because of outstanding leadership and their accomplishments in community service.

When they came to Washington they left behind their projects in farming and homemaking to learn more about their Government. They came with the realization that no matter how fine the livestock they bred nor how abundant the corn crop they raised, all would be worthless if free government by free people is imperiled. They came knowing too that to maintain a government, "of the people, by the people, for the people," the citizen must take responsibilities if he is to continue to enjoy privileges of freedom.

Here they studied their Government in operation and in their own meetings discussed and outlined practical ways on how young people cannot only prepare themselves for the duties of citizenship, but take on immediate responsibilities of citizenship in their own communities.

To prepare them for their discussions and their final recommendations they heard addresses by leaders of government, and nationally known editors and educators. They visited the House and Senate and attended committee hearings of both Houses. They visited national memorials to the men and women who represented in deed and spirit the fundamental concepts upon which our Government is based. And they saw the operation of their Government's departments in action.

Under the general theme of their meeting, ' Serving as Citizens in Our Representative Government," they built their programs around the following subjects:

"Fundamentals of Democracy." Here the idea was emphasized that the Government exists for the people not the people for the Government. As an example, the Department of Agriculture was shown in operation with its scientists, administrators, laboratories, and experimental farms, and other resources devoted to providing 6½ million farm families with the benefits of research which will aid them in making better farms and homes. It pointed out too that the problems of agriculture are the problems of the whole country and that its function is to fit into a scheme that provides for the general welfare.

"Individual Responsibility for Citizenship"; "Leadership Responsibility in a Representative Government"; "In God We Trust" (in Sunday services the spiritual side of life was stressed); "Safeguarding Liberty Through Group Action"; "Promoting the General Welfare"; and "Hold High the Torch"; were other topics which the groups took up.

For these discussion meetings the delegates met in sections, each taking up practical phases of the broad subject. Here they translated into action terms the ways in which they and other young people could perform their citizenship duties.

For an example, under the head of, "Safeguarding Liberty Through Group Action," they discussed ways in which young people, by taking leadership and active part in community affairs, can make for a better and stronger country. They talked about how a 4–H Club recreation program can be undertaken by establishinn a recreation center in each community ig the school building, church, or lodge hall or any other available place. Here a year-round program including games, dramatics, reading, music, crafts, and nature studies could be built. They discussed how best to encourage attendance and cooperation with churches through projects that will beautify the church grounds and

do other special work which would improve the church of their choice.

They talked too of how members could help each other in finding good jobs in both rural areas and cities. The development of programs in which both boys and girls could get an income through work on the farm and at home were outlined. Cooperation with superintendents and school boards and with farm and civic organizations were pointed out as ways that young people can have the benefits in taking part in community projects and to contribute to them.

Out of these discussions on using community groups to develop better citizens, the panel of 4–H-ers under the chairmanship of one of their own members drew up recommendations which may be translated into a national program. Recommendations were also drawn up under each of the general topics discussed. As this is written the recommendations of this year's committees are not available.

But as an example of these recommendations and the use to which they are put, the work done by one of the groups at the 1946 meeting on "Building Health For a Strong America" is in point. Here are the conclusions of one of the panels as made by one of the young people:

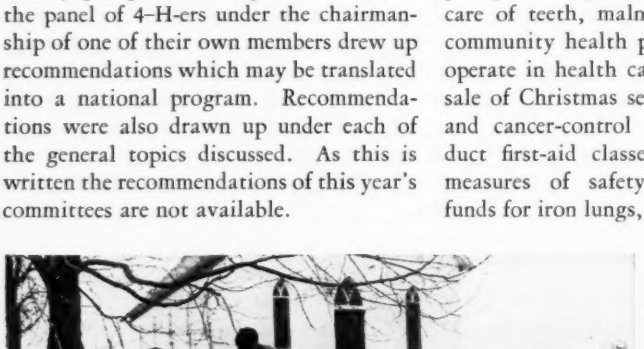
Club goals should be: (1) To conduct a survey of community health problems and submit a report to health authorities. (2) To discuss at club meetings health education with special emphasis on communicable diseases. (3) To have a health officer in each club to oversee the health and safety program of the members. (4) To put special emphasis on tuberculosis tests, care of teeth, malnutrition, and general community health problems. (5) To cooperate in health campaigns, such as the sale of Christmas seals, March of Dimes, and cancer-control drives. (6) To conduct first-aid classes and practice basic measures of safety. (7) To originate funds for iron lungs, respirators, and other things valuable for health maintenance.

We, therefore, recommend that our 4–H organization put into effect such a health program, with necessary improvements and adjustments.

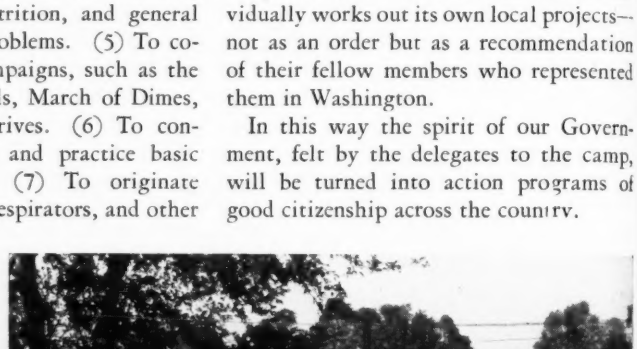
As a result of these 1946 recommendations, this year a national 4–H Club program is being put into effect in the local 4–H Clubs of the country.

So, too, the recommendations of last month's young conferees on citizenship programs will be submitted to the 75,146 4–H Clubs of the country. They will be used by these clubs not as programs autocratically imposed upon them from above. They will come to each club—which individually works out its own local projects—not as an order but as a recommendation of their fellow members who represented them in Washington.

In this way the spirit of our Government, felt by the delegates to the camp, will be turned into action programs of good citizenship across the country.



4–H-ers take part in a group project for improvement of their community by landscaping their churchyard. Here they plant trees.

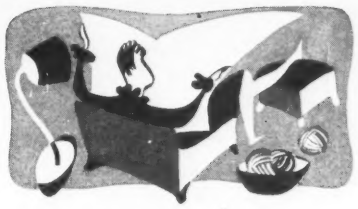


Better livestock and crops are practical goals of 4–H members. Many raise chickens for good meat and high egg production.

To be better citizens delegates to the 4–H Club encampment see their Government in action. They attent a congressional hearing.

After a day studing their Government 4–H-ers returned to their quarters in buildings erected for housing Washington war workers.

Close up on the News . . .



Milk Drinking Drops

The average American is drinking less milk this year than last, the Bureau of Agricultural Economics of the U. S. Department of Agriculture reports.

Sale of fluid milk as well as cream and ice cream have already fallen below last year, according to the records. BAE expects milk sales to continue at a lower level for the remainder of the year than during 1946.

The drop in sales of milk, cream, and ice cream has been particularly noticeable in urban communities.

Decrease in milk consumption means that the national diet will be poorer in two important nutrients—calcium and riboflavin—than it has been in recent years. Without milk, it is difficult for the average person to obtain enough calcium and riboflavin for best health. The big increase in milk consumption during the war was one of the principal factors contributing to an improvement in the national diet which was hailed by nutritionist and health workers.

One reason for the recent decrease in milk consumption is that American families are spending more for other consumer goods which they have been unable to buy until lately because of war shortages.

Price is another factor in determining how families will spend their money.

Supplies of milk and most dairy products will be plentiful this summer but prices will continue high.

Hems Down

Now that the trend in skirt lengths seems to be a bit downward, letting down hems is becoming a scarcely popular but widespread indoor sport with many women.

This brings up the question of how to lengthen a skirt without giving it that telltale letdown look?

For the aid and comfort of gals who refuse to be stampeded into discarding last season's dresses which are "perfectly good except for the length," the Department of Agriculture has come forth with some useful hemline hints.

If it's a wool skirt that's being let down, and the fabric is shiny on the underside of the hem, rip the hem and steam-press it on the wrong side of the fabric—that is, if the wool is lightweight or has a raised pattern in the weave. If it's a thick wool, steam-pressing on the right side may be more effective. To steam-press, cover the fabric with a dry wool press cloth, then with a cotton cloth dampened in warm water. Use a warm iron, set down, then lift it—don't slide it back and forth. If the shine still shows after all this, here's another trick. Take a clean brush or a rubber sponge, the kind used for suede shoes, and try raising the nap of the wool with it.

The steam-pressing may also work with acetate rayon which is shiny on the underside of the hem. If the shine can't be removed, however, the lengthening may have to be accomplished in some other way.

If a hem-line crease is conspicuous and stubborn, here's a method that will often help to remedy the situation: Try wetting the crease line on the wrong side; then turn the goods over on the right side and roll the crease back and forth in the fingers to work it out. Press on the wrong side afterwards.

Poultry Problems Considered

Research aimed toward quality improvement and conservation of poultry products should be given high priority, according to recommendations of the industry Poultry Advisory Committee which was appointed by the Secretary of Agriculture under the provisions of the Research and Marketing Act. At present heavy losses in product and quality are sustained on the farm and at every step in marketing and processing, the committee finds.

Following a recent meeting, the Committee issued a report which stresses the importance of the poultry industry. The report points out that production of poultry and eggs is more widespread than that of any other major agricultural product. Eggs and poultry are produced on over 85 percent of the farms of the country.

In money value, poultry products now stand third or fourth in the list of agricultural products, taking into account cash receipts from sales and the money value of the eggs and poultry consumed in farm homes.

Poultry production was stepped up greatly during the war. Cash receipts from poultry and eggs increased from $1,370,669,000 in 1941 to $3,049,084,000 in 1945. Although part of this rise was due to higher prices and sales to the armed forces and to lend-lease, a big part of the boom is the increased consumption by American families. The average American ate 80 more eggs in 1946 than he consumed annually during the 1935–39 period. He ate 7.4 more pounds of chicken in 1946 than he averaged annually during the preceding period.

In order to maintain as much of this larger market as possible, the Committee feels that major emphasis should be placed on more efficient production and marketing and increased consumption.

Continuing World Food Shortage

Present prospects are that the world food supply for the 1947–48 consumption year may be little if any better than in 1946–47, despite world-wide efforts to increase production.

This gloomy forecast was recently announced by the U. S. Department of Agriculture on the basis of a survey of early crop conditions in important producing areas throughout the world.

Owing to the severe winter, extensive floods, and labor shortages, the acreage in winter food grains in the countries of Western Europe has been reduced below last year. Only a small part of this loss in grain production can be made up by spring plantings but there will probably be larger acreages of sugarbeets, potatoes and feed grains. Because of the importance of bread-grains in the domestic food production in European countries, it is likely that the total food output for 1947–48 in this area will be somewhat below last year, notwithstanding the larger spring planting.

GUIDE POSTS

For Amateur Ironers

Problem for an amateur ironer: How come those pale brown spots that sometimes appear on freshly washed and ironed clothes? The iron definitely wasn't too hot, so it can't be scorch. Anyhow the stain is likely to look more like a spot than a scorch. What is it?

Look at your ironing-board cover for the answer, mystified madam. Could be that said cover is scorched and the pale brown stain on your clean blouse or dress was picked up when you ironed them. Such will happen if the ironing board cover is scorched and the clothing damp enough to absorb the brown color when it's pressed over the stain.

In the same way, other soluble stains on the ironing board may be transferred to clothes during ironing. When clothes aren't colorfast, for example, part of the dye sometimes irons off on the ironing board cover, making it a menace to light-colored clothing.

So be sure your ironing board cover is clean, before you start ironing, advise the home economists of the U. S. Department of Agriculture.

More Kinds of Bananas

Yes, we'll have more kinds of bananas tomorrow, may be.

Most United States consumers know only the large yellow Gros Michel banana because the other varieties rarely make the long trip from the tropics to the corner fruit stand.

But now air transportation may change all this—and introduce to North Americans some of the more exotic and perishable varieties of bananas from Latin America, according to an article published in the April-May issue of *Agriculture in the Americas*.

Down south of the border and south of the equator, the Latin Americans can choose from among 5 to 15 different kinds of bananas, both ripe and green, to suit the particular purpose they have in mind. For example there is the Claret banana which is popular at Christmas time. Then there's the Apple which has a flavor reminiscent of a mellow apple. One of the most delicate and perishable varieties is the Lady Finger, while the plantain is a cooking banana.

Headless Sheets

Will headless sheets be next? One expert in the field thinks they would make life simpler for the housewife. You see, housewives sometimes have a hard time remembering to keep reversing the bed sheets to distribute the wear.

Putting the wide hem at the top of the bed one time and at the bottom of the bed the next is logical and reasonable—because this moves the spot that gets the most wear under the sleeper's shoulders. Still and all it *is* hard to remember whether the wide hem or the short hem of each sheet was at the top last time.

Why not end all this perplexity by making sheet hems the same width top and bottom? And then let the law of averages take care of the problem.

F. X. Ritger, director of purchases for the State of Wisconsin, asks this question in a letter to CONSUMERS' GUIDE. He says:

"We see no good reason why sheets should not be regularly furnished with a 2-inch hem, top and bottom. This automatically would change the position of the sheet on the bed and not require any particular thought in occasionally reversing the sheet as is now required in order to spread the wear and thereby increasing the length of life."

Helping the Little Gals

Who said all gals are tall?

All of a sudden, the pattern industry has discovered that some lasses are on the short side—5 feet, 5 inches, say, instead of 5 feet, 7 inches in their stocking feet.

For years patterns have been made in one length, proportioned to fit the tall woman who is about 5 feet 7 inches. But now for the first time "sized-to-height" patterns are making their appearance. In other words some patterns nowadays are scaled to the proportions of the shorter woman who is under 5 feet 5 inches.

The new patterns are designed to make sewing simpler for the short woman. Three advantages claimed by the pattern manufacturer are: better fit; easier dressmaking because of the fewer alterations involved; and economy in fabric purchases.

Lessons in Eating

If Americans today don't know more about nutrition than they did before the war, it isn't because they haven't been exposed to nutrition in a big way.

Here are just some of the activities used by nutrition committees in the different communities throughout the country to promote the National Wartime Nutrition Program: A nutrition streetcar; food demonstrations; refresher courses in nutrition; discussion groups; nutrition reference shelves in libraries: traveling libraries, one of them in a horse-drawn "little red wagon" that was routed to outlying neighborhoods; chain telephone calls; bulletin boards in war plants, school and offices; better breakfast campaigns; and a lunch-box derby.

These are only a few of wartime nutrition education activities listed in an article by Rowena Carpenter in the spring issue of the *Land Policy Review*.

But how much did people learn from all this education?

In answer to that one, the article says that tallying the results is not easy because much of the value is intangible and does not lend itself to measurement. ". . . The few surveys that have been made to check on diet changes indicate that many people are eating more wisely . . ."

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